J. M. H.—viz. the employment by some finches of flowers in the formation of their nests (NATURE, vol. xvi. p. 83, and vol. xxxvi. pp. 101–2)—it may be worth while to submit a detailed consideration of the case.

The front of the house of a friend living at No 47 Highbury Hill is covered by an extensive growth of white jasmine which reaches beyond the first-floor windows. For several years house-sparrows have used the bushy branches of this shrub without causing special attention. This year, however, they have taken a new departure in nest-building. Not satisfied, apparently, with the hay, straw, and other ordinary materials of sparrow architecture, they have suddenly aspired to appropriating to their use the bright yellow flowers of laburnum, two trees of which are in full bloom a few yards from the first-floor window-sills below which they are carrying on their operations. Three nests were discovered twelve days ago, built close together in the jasmine, all of which had laburnum flowers strewn upon the top of ordinary nests; one nest contained two young birds just hatched, and the other two had each a couple of eggs. As they rather disturbed the lady occupant of the house, she had all three nests destroyed, the litter from them entirely filling a large foot-bath. But the three pairs of birds, as might be expected, only set to work rebuilding their nests in the same place, furnishing them with more laburnum than before. They were however again disturbed, and an obstacle (which in a previous year had proved effectual in stopping the building in another part of the house front) was set in the place of the nests, but still they did not desist; two pairs continued to add their materials on the top of it, with more laburnum than ever, replenishing the nest as constantly as it was removed, while the third pair rebuilt their nest under the sill of the next window, using laburnum also. Even entire sprays of the flowers were used, and the ground beneath the trees was so much strewn with fragments that my friend at first thought that boys had been pulling the trees. All the birds are now allowed to remain unmolested, and the yellow decoration is withered, without fresh being provided.

This unaccustomed action of the sparrows is apparently somewhat different from the operations described by your correspondent J. M. H., for the bright golden flowers enveloping the nests are so strangely conspicuous as to attract the attention of passers by, and therefore cannot answer the protective purpose evident both in the case of the goldfinches with forget-me-nots and of the sparrows that used Alyssum. The only explanation I can suggest is that the birds have elevated their æsthetic taste to this "quite too too" extent of art cultus: It is highly interesting to note also that—in opposition to the notions of the obsolete school of naturalists, who believed only in blind instinct—the rage for collecting their favourite "yellow" is infectious with these little yearners for the intense, just as is the desire for "blue" that now and then breaks out (like a disease) amongst larger householders. The three pairs of birds seemed to vie with one another in their revelry of the chosen colour. It will be instructive to learn whether the fashion will last for many seasons: perhaps it will languish of satiety, and some other attraction of a less absorbing kind arise.

The fondness of birds (in this country at least), for the colour yellow is perhaps worth considering in this connexion. A large number of wild or cultivated plants might be enumerated that produce yellow flowers, which are either used as food or have their petals mauled by birds. There need be no doubt, I think, that the mutilation of such flowers is due to a playful fondness rather than to a dislike of the flowers. That birds evidently exercise the selective faculty in the choice of flowers is well illustrated by the fact, twice observed by my brother, that sparrows pull to pieces the yellow flowers only in mixed beds of pansies, and of crocuses, without injuring a single purple, mauve, or white flower of either kind. I have myself also witnessed the same selective operation performed by a sparrow on various crocuses growing in pots upon my window-sill, and I find many correspondents gave similar testimony to this fact in a series of letters which appeared in these pages in the year 1877 (vols. xvi. and xvii.). It may be questioned whether the education of their preference for the colour yellow is in any way connected with the fact that it is proper to the yolk of their eggs, and which they must be aware of; but since all good eggs contain that colour, while probably some birds do not like it and greatly prefer other colours, this suggestion may be no more valid as a theory than would be the argument that some people's taste for claret-colour is due to the analogous physiological accident of arterial coloration. The rich yellow colour, again, of the beaks, entire mouths, and "open sepulchres" of the newly-hatched nestlings affords their parents ample opportunities for the contemplation of colour, and there may be an unconscious mental absorption of the colour in consequence of this course of training. At any rate, canary yellow is very highly developed in many species of the *Fringillidæ*, and there is a strong tendency towards the development of the yellowish colour in the plumage of the males of several British finches, apparently through a greenish-brown tinge. It is also well developed amongst the weavers and the orioles, to which they are so nearly allied. That sparrows should thus use sprays of flowers is perhaps not so remarkable when we recall the close affinity they bear to *Ploceus* and other weaver-birds.

Doubtless the colour-sense in birds, as well as in insects, is a real factor in the evolution of the floral beauty that surrounds them, although the *modus operandi* is not always one that can be so readily traced. WILLIAM WHITE.

55 Highbury Hill, London, June 9.

Names for Electric Units of Self-Induction and Conductivity.

A NAME seems to be wanted for the practical unit of self-induction, viz. an ohm multiplied by a second; in other words, for a length approximately equal to an earth-quadrant. Profs. Ayrton and Perry call it a "secohm." Why not call it a "quad"? It would be a handy great length for many other purposes. For instance, the velocity of light in air would be 30 quads per second, in common glass 20 quads per second.

To avoid misunderstanding, it would have to be understood that the actual earth-quadrant passing through any given place is only approximately a quad, its real value having to be determined geodetically. A quad is to be understood as ten million metres *precisely*.

Another unit requiring a name is the unit of conductivity. Sir William Thomson has suggested the word "mho," but it has not been greedily assimilated. I make the small suggestion of omitting the *h*. True, the expressions 12 mo and 16 mo would at first excite only bookbinding ideas, but they would soon carry a fresh meaning to electricians. OLIVER J. LODGE.

June 13.

Units of Weight, Mass, and Force.

THE necessity for *names* for the units of velocity and acceleration is very clearly illustrated by a criticism of my "Dynamics for Beginners," which appears in the *Practical Engineer* of June 3. After objecting to the introduction of new names, and explaining that *a velo* stands for *a foot per second*, the writer proceeds:—"The second new name is 'celo,' and is meant for an acceleration of *one foot per second*, or unit acceleration; so that if a body is moving with a velocity which is being accelerated *at the rate of one foot per second*, it is said in the new language to possess one celo. In other words, a celo means *an acceleration of one foot per second*, or *of one velo*." The italics are mine. I cannot resist quoting also the following sentence, which occurs a little lower down in the same criticism:—"We think there is something ridiculous about the adoption of these names, which, while possessing the very questionable advantage of shortening the language of the subject by some two or three words, *serve to muddle the mind of the student, and to obscure the sense by wrapping it up in meaningless words.*"

Why is not the *Practical Engineer* consistent? He ought to state that just as a celo is unnecessary, for he considers it the same as a velo, in like manner a velo is unnecessary, for by the same line of argument it must be the same as a *foot*. The fact is that the names velo and celo are not *necessary* for scientific men, although I expect they will be found to be convenient. It is, I believe, generally admitted that some such words are greatly needed by teachers; for it is the clear mental differentiation of the ideas expressed by velo and celo, or the want of it, which often marks the distinction between a sound physicist and a muddler. JOHN B. LOCK.

Gonville and Caius College, June 4.

I AGREE with your correspondent, Mr. R. B. Hayward (NATURE, vol. xxxv. p. 604), in holding that names for the dynamical units are of less importance than a convenient nota-

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tion for them. To invent names for the pound-foot-second units may be helpful to beginners; but it is a small matter compared with a notation which completely specifies the mode of dependence of each unit upon the pound, foot, and second; and it is still more so when compared with a general notation which will serve for any system of units.

The difference between names and notation is well seen in the case of chemistry. The notation for a substance expresses the manner in which the substance is made up of the elementary substances; while its name, however derived, serves merely as a distinguishing mark: and just as the chemical notation for a substance may be used as a name for the substance, so the notation for a physical unit may serve as a name for that unit.

In my work on "Physical Arithmetic," published by Macmillan and Co. in 1885, and reviewed in NATURE, vol. xxxi. p. 551, I have devised a notation which is the natural and legitimate extension of existing conventions both in language and in the mathematics; and I have made that notation the basis of a method for solving problems in applied arithmetic. If the Committee of the Association for the Improvement of Geometrical Teaching are considering the subject, I ask them to consider whether any notation more in harmony with existing conventions can be devised than the notation of that work.

As a specimen I append the general notation for the chief geometrical, kinematical, and dynamical units. The word *by* corresponds to ×, and the word *per* to ÷, or / as now frequently used by physicists. The same method of notation applies to the thermal and electrical units. The notation for any special system is obtained by substituting the special names of the fundamental units **L**, **M**, **T**. The test of the value of a notation is the amount of facility it offers in reasoning; by referring to "Physical Arithmetic," anyone may see how this notation stands the test.

NOTATION FOR GENERAL UNITS.

Quantity.	Notation.	Dimensions.
	I. *Geometrical.*	
Length	**L**	l
Surface	**L** by **L** = **S**	l^2
Volume	**L** by **L** by **L** = **V**	l^3
Angle	**L** arc per **L** radius	l^0
Sine	**L** opposite per **L** along	l^0
Curvature	Radian per **L** arc	l^{-1}
	II. *Kinematical.*	
Time	**T**	t
Velocity	**L** per **T**	lt^{-1}
Acceleration	**L** per **T** per **T**	lt^{-2}
Angular velocity	**L** arc per **L** radius per **T**	t^{-1}
	III. *Dynamical.*	
Mass	**M**	m
Density	**M** per **V**	ml^{-3}
Mass-vector	**M** by **L**	ml
Momentum	**M** by **L** per **T**	mlt^{-1}
Force	**M** by **L** per **T** per **T** = **F**	mlt^{-2}
Pressure	**F** per **S**	$ml^{-1}t^{-2}$
Work	**F** by **L** = **W**	ml^2t^{-2}
Activity	**W** per **T**	ml^2t^{-3}

ALEXANDER MACFARLANE.

Austin, Texas, May 28.

The New Degrees at Cambridge.

A FEW years ago it pleased the dominant body in the University of Cambridge to institute a Doctorate of Science and of Letters. Candidates for these new degrees were required to be of a certain academical standing, and to submit the proofs of their qualifications to the respective Special Boards of Studies, who, after certain formalities, were empowered to forward their claims to the General Board of Studies for approval. By many well-meaning persons this step was thought to be a great encouragement to both letters and science. It was at the same time understood that the qualification for the Doctorate in Science was to be rather less than was required for admission to the Royal Society—a standard which all will admit is not too high. Whether any similar understanding was agreed upon as regards the Doctorate in Literature is uncertain. At first there was no particular desire shown among the best men of science and literature to aspire to the new distinction, and it is rumoured that a considerable amount of persuasion and friendly pressure had to be used to induce such men to submit to the infliction. But in time a few leading lights underwent the ordeal and were duly invested. The way being cleared, a good many others have followed, and as the Boards have not been too severe in judging the claims of candidates, the outbreak of "scarletina" has become rather general. However, no particular harm has ensued, and the coffers of the University have reaped the benefit—for the fee is not small.

But now there is another aspect to this business. The new Doctorate is inferior in rank to that of the old Faculties. The senior Doctor in Science or Letters must always yield precedence to the youngest Doctor in Divinity, Law, or Physics. So far, those who have sought the new degrees have known what their position would be; but of late the Council of Senate has taken upon itself to determine that when an honorary degree should be given to any distinguished man of science or letters he is not to have the higher degree of LL.D., but to be content with the lower rank. As a rule honorary degrees are almost invariably given to strangers—foreigners or colonists. They are not aware of this fine though real distinction; and thus this very day the Senate House at Cambridge has witnessed the time honoured and highly valued distinction of LL.D. being conferred on a number of excellent gentlemen, beginning with the Lord Mayor of London, while the new and inferior rank of Sc.D. is bestowed on one of the most distinguished biologists of the United States, whom the sister University is this week to recognize as a D.C.L.

It may be urged that proceedings like this are necessary to reflect the proper amount of dignity on the new "honour," and that in time it will be regarded as highly as the old one has been. But I submit that this is not fair to the innocent recipients, and, moreover, that the University should recognize the fact that its highest honours are not to be bestowed upon successful merchants, politicians, and persons of eminent social standing, while the greatest men of letters and science have to take up with the lower grade. OUTIS.

June 20.

"After-Glows" at Helensburgh.

I BEG to inclose a letter from Mr. L. P. Muirhead, with reference to the "after-glows" recently seen at Helensburgh, which you may think worthy of a place in NATURE.

ROBERT H. SCOTT.

Meteorological Office, 116 Victoria Street, London, S.W.,
June 8.

Rosemount, Helensburgh, June 4, 1887, 21*h.*

DEAR SIR,—I do not notice any remarks in any of the weather reports or in the press concerning the after-glows, and as they may be local only, I drop you a line. All have lasted about 45m.; the first of any note, on the 17th, commencing well down on the eastern, and finally fading away on the western, horizon, all through of a deep rosy red reflected from the under and western side of cirro-stratus. Again, on May 21, 23, 29, 30, 31, and June 1. The last was peculiar, not only as being the most lurid, the cloudscape being marvellously fantastic, but, dying away at 21h., it revived faintly at 21h. 18m. to 21h. 30m., and again from 22h. to 22h. 20m., of a decided rose-colour on western side of roll-cumulus coming up from east-north-east. Thursday, Friday, and to-night there is no glow; overcast and oppressive just now; a little rain fell in forenoon. The glow reminds me, on a more intense scale, of that previous to January 26, 1884, and again on December 8 last year.

From May 21, until to day, the weather has been genial and fine. Faithfully yours,

LEWIS P. MUIRHEAD.

R. H. Scott, Esq., Meteorological Office, London.

Zirconia.

SOMEHOW I overlooked for a few days the letter of Messrs. Hopkin and Williams, which necessitates a brief reply, since they have confused (I am sure from mere haste) two samples, one of which I never had, and a correspondence most of which took place after what I had recorded.

Briefly, these are the facts. I was informed by Mr. T. Bolas that I could obtain "pure zirconia" of Messrs. Hopkin and

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